

AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A lighting device for lighting a high-pressure discharge lamp having an outer tube, an interior of which is substantially under vacuum, the lighting device comprising:

a ballast having at least a current limiting element;

a high-voltage pulse generating circuit operable to generate a high-voltage pulse;

a lighting ~~discriminating means~~ discriminator operable to discriminate between lighting and non-lighting of the discharge lamp;

a timer circuit operable to set a predetermined period of time; and

a pulse-stop ~~control means~~ controller operable to stop generation of the high-voltage pulse;

wherein when the lighting ~~discriminating means~~ discriminator discriminates non-lighting after lighting has been discriminated, generation of the high-voltage pulse is stopped within the predetermined period of time set by the timer circuit,

the discharge lamp further has an arc tube sealed in the outer tube and metallic elements disposed in the outer tube and outside the arc tube, and

the predetermined period of time set by the timer circuit is a period of time within which the metallic elements are cooled below a temperature at which no discharge occurs between opposite polarities of the metallic elements.

2. (Cancelled)

3. (Currently Amended) A lighting device for lighting a high-pressure discharge lamp having an outer tube, an interior of which is substantially under vacuum, the lighting device comprising:

a ballast having at least a current limiting element;

a high-voltage pulse generating circuit operable to generate a high-voltage pulse;

a half-wave discharge ~~detecting means~~ detector operable to detect half-wave discharge of the discharge lamp; and

a pulse-stop ~~control means~~ controller operable to stop generation of the high-voltage pulse;

wherein when the half-wave discharge ~~detecting means~~ detector detects half-wave discharge, the pulse-stop ~~control means~~ controller stops generation of the high-voltage pulse.

4. (Currently Amended) The lighting device according to claim 3, further comprising a timer circuit operable to set a predetermined period of time, wherein when the half-wave discharge ~~detecting means~~ detector detects half-wave discharge, generation of the high-voltage pulse is stopped within the predetermined period of time set by the timer circuit.

5. (Original) The lighting device according to claim 4, wherein the discharge lamp further has an arc tube sealed in the outer tube and metallic elements disposed in the outer tube and outside the arc tube, and wherein the predetermined period of time set by the timer circuit is

a period of time within which the metallic elements are cooled below a temperature at which no discharge occurs between opposite polarities of the metallic elements.

6. (Currently Amended) The lighting device according to claim 3, wherein the half-wave discharge ~~detecting means~~ detector detects a difference in lamp waveform for every half period and determines presence of half-wave discharge when the detected value has exceeded a predetermined value.

7. (Currently Amended) A lighting device for lighting a high-pressure discharge lamp having an outer tube, an interior of which is substantially under vacuum, the lighting device comprising:

a ballast having at least a current limiting element;

a high-voltage pulse generating circuit operable to generate a high-voltage pulse;

a timer circuit operable to set a predetermined period of time;

a return type ~~cutoff means~~ cutoffter operable to cut off power supply to the discharge lamp upon detection of an abnormal temperature rise; and

a cutoff ~~detecting means~~ detector operable to detect cutoff;

wherein the cutoff ~~detecting means~~ detector detects the cutoff, generation of the high-voltage pulse is stopped within the predetermined period of time set by the timer circuit,

the discharge lamp further has an arc tube sealed in the outer tube and metallic elements disposed in the outer tube and outside the arc tube, and

the predetermined period of time set by the timer circuit is a period of time within which the metallic elements are cooled below a temperature at which no discharge occurs between opposite polarities of the metallic elements.

8. (Cancelled)

9. (Currently Amended) The lighting device according to claim 7, wherein the return type ~~cutoff means~~ cutoff comprises a thermal protector.

10. (Currently Amended) The lighting device according to claim 1, wherein the lighting ~~discriminating means~~ discriminator is reset with power cutoff.

11. (Previously Presented) The lighting device according to claim 1, wherein the timer circuit comprises a microcomputer.

12. (Previously Presented) A lighting equipment having a lighting device according to claim 1.

13. (Currently Amended) The lighting device according to claim 3, wherein the half-wave discharge ~~detecting means~~ detector is reset with power cutoff.

14. (Previously Presented) The lighting device according to claim 4, wherein the timer circuit comprises a microcomputer.

15. (Previously Presented) A lighting equipment having a lighting device according to claim 3.

16. (Currently Amended) The lighting device according to claim 7, wherein the cutoff ~~detecting means~~ detector is reset with power cutoff.

17. (Previously Presented) The lighting device according to claim 7, wherein the timer circuit comprises a microcomputer.

18. (Previously Presented) A lighting equipment having a lighting device according to claim 7.